MOTHERCRAFT

FOR SCHOOL GIRLS

FLORENCE HORSPOOL

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LADY MOND.

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FOR SCHOOL GIRLS

BY

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WITH A PREFACE BY

LADY MOND

FOUNDER AND PRESIDENT OF THE MOTHERS' AND BABIES' WELCOME, SWANSEA

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PREFACE

By LADY MOND

At a moment when "race suicide" is attracting such anxious attention throughout the civilised world, it is surely time to recall to people's minds that a declining birth-rate is not the only cause of a slower increase of the population. There is one far older, more extensive, and, above all, more cruel cause: excessive infantile mortality —the ever-succeeding hecatombs of innocent babies that fall victims to the ignorance of millions of mothers. To reduce this heavy toll to the lowest limit possible must surely be one of the most urgent aims of a true Imperialism, for what can be of greater urgency for our Empire than an adequate supply of strong and healthy children to utilise our great inheritance?

Many of us are convinced that the best means of promoting this great end is the education of the future mothers of the race in their sacred duty of giving the coming generation a fair start in life. This conviction is surely sufficient excuse for an appeal to mothers to join in the work that has been begun, and for this reason I give

particulars of an effort with which I am connected, to give school girls at Swansea practical lessons in their most important task in life, the care of their future home and children.

My attention was first called to the subject of the saving of infant life on hearing of the scheme for providing dinners for indigent nursing mothers in Paris, and by Dr. Broadbent's scheme at Huddersfield of rewarding mothers who had been most successful in rearing their children up to the age of twelve months. The high death-rate amongst infants in Swansea drew my special attention to this spot as a favourable field to carry out this work. There I found circumstances most favourable, above all in the co-operation of many capable and self-sacrificing friends and a local authority, whose personal experience and enthusiasm in the work have been invaluable for the successful working of the scheme.

Early in 1911 we opened our "Mothers' and Babies' Welcome" in a small house in one of the principal streets of Swansea, and in the centre of one of the poorest districts, organising it on the lines of the St. Pancras "School for Mothers." At first, the most important part of the work at the Welcome was the supply of nutritious dinners to nursing and expectant mothers, creed, politics, married or unmarried being of no account in their application for assistance. For 1½d. (half the cost price) they get a good hot dinner, but those unable to afford this sum are supplied

gratis. This help begins three months before the birth of the child, the dinners are sent out during the time the mother is laid up, and continued, if necessary, throughout the whole period of nursing.

In 1912 no fewer than 11,570 of these dinners were provided, the largest number to any one mother being 276 and the lowest 24. There are " infant consultations " twice a week by our honorary medical officer, Dr. Mary Ritchings, who advises mothers about their ailing babies, and also once a fortnight examines and weighs the healthy infants of mothers attending the Welcome.

To this work has now been added lessons in cookery, sewing, and also health talks, for which the Board of Education allows us a grant, the work being supervised by Mr. T. J. Rees, the Swansea Superintendent of Education ; and, what we are disposed to regard as of still more vital importance, lessons in mothercraft for girls.

Our Mothercraft classes for the elder school girls, which are held on three mornings in each week, are exceptionally popular. The girls are eager to learn, and their mothers are ready to use the knowledge they acquire. Indeed, the gratitude of the mothers is of great importance to the success of the scheme, as they supply us with the relays of live babies necessary for our object lessons. The idea of giving such lessons to girls of twelve to fourteen at first aroused doubts in some minds, but as the school age ends at fourteen, and in Swansea many of

the girls enter works immediately on leaving school, there was no alternative between giving such instruction while they were still able to attend the lessons or of renouncing them altogether.

These classes, attended each by twelve girls, have been established not only with the approval of the schools of the town, but with the active and enthusiastic co-operation of the teachers, who accompany the girls, stimulate their interest in the subject, and help them more fully to realise the value of the instruction. Miss Jarrett, our Superintendent, who gives these lessons, shows the girls the right way to bathe and dress a live baby—not a doll—also pointing out the advantages of the model clothes in which it is dressed. They are also shown how to make a baby's cot at the lowest cost, as, for instance, out of a banana crate ; of the necessity of keeping babies warm, and how to feed them—if they must be brought up by hand—while emphasising the superiority of breast feeding. Other items in the course of six lessons are the weighing of the baby, the best food for a nursing mother, the choice and preparation of foods and their storage, the value of soups, stews, and milk foods, suitable and unsuitable clothing, and the necessity of plenty of sleep and fresh air.

The keenness with which the girls follow the lessons is proved by the results of the examinations held in November 1912 and November 1913. On the former occasion 70 girls entered for examination, and the answers

were so good that it was decided to give 7 prizes instead of the 3 originally intended, while for the less successful there were 12 "special certificates" and 30 "certificates of merit" for those who did fairly well. In 1913 there were again 70 girls who competed from six schools, 10 prizes being awarded and 43 certificates.

One excellent result of the initiative of Swansea, the first town in Wales to introduce these Mothercraft lessons, is that some of the Welsh country districts are now setting about to follow its example. Really such classes ought to be established everywhere by the municipal authorities, particularly as the cost is so slight that it would add practically nothing to the rates.

For the first year the total cost of our Welcome, housed in an ordinary six-roomed dwelling, usually let at 16s. a week, was only £395, which included the salaries of a superintendent and a nurse, and £124 spent on provisions. Unfortunately, under the existing regulations, it is impossible to secure grants from the education authorities for Mothercraft lessons, but that is a matter which we hope will be put right later on. We are convinced that grants ought to be made for these lessons, if only as a recognition by the State of their importance.

This scheme has now been recognised at Whitehall. Mr. A. T. Davies, the Permanent Secretary of the Welsh Department of the Board of Education, having visited Swansea and seen the work, has given it, in his own words,

"a whole-hearted benediction." But it must not stop here, and we intend to go still farther afield. If this knowledge of the highest and noblest duty of womanhood —the care of infant life—is good for the elementary school girl, is it not also good for the girl in the secondary school and for the intending teacher in the training college? We need teachers, inspectors, writers, thinkers—yes, but we also need home-makers and nation-makers, nurses, sick visitors, and midwives.

There are hundreds of women who could carry on this work in all parts of the country, especially if several joined together to bear the expense. Let us remember that it is useless to have an elaborate system of education unless we are determined to take steps to rear a race of children physically fit to take advantage of the education provided. The poet Browning puts the whole question into three words: "Flesh helps Soul!"

VIOLET MOND.

AUTHOR'S PREFACE

MANY years' experience gained whilst visiting the homes of infants during the course of my duties as Infant Visitor to the Swansea Corporation impressed upon me the outstanding necessity of educating young mothers in infant care and management. I so often find all my efforts completely swamped by the influence of ancient custom; even when the young mother is well disposed and anxious to learn from me, the claims to superior experience and knowledge on the part of grandmother, mother, and neighbours often prevail.

When the Babies' Welcome was opened it provided me with the opportunity and facilities for putting what I had long desired into practice on a small scale.

At the start it was feared by some that girls about leaving the elementary schools are too young to be taught Mothercraft, as it might, they thought, somewhat spoil the freshness of their minds. My three years' experience is that this is not so. Mothers and teachers alike have expressed their approval of the classes. Mothercraft as taught to the girls means the craft of rearing the baby.

This is what all girls in working-class homes not only cannot help getting acquainted with, but they often have to assist their mothers to nurse the baby; so the teaching of Mothercraft simply means teaching them what they already know and practise, but know and practise badly.

True, this subject might with advantage be taught at a slightly later age, but under our present educational system there is no other opportunity of doing so—at least not as a compulsory subject—though it might be taught very usefully in evening classes to older unmarried girls and young married women.

I am personally very satisfied with the results. These future mothers, I am convinced, will not be victims of ancient custom, indeed they are even now influencing their own mothers, and they will continue to regard the education they have received at the Mothercraft classes as of superior authority to the advice of a past generation, who have not had the advantage of modern training and education in this important craft.

This little handbook attempts to give a description of the method used in the classes.

I wish to acknowledge that it has been written on the suggestion of Lady Mond. Without her encouragement and interest in infant welfare there would have been no Babies' Welcome, no Mothercraft classes, and no book to write.

I also wish to express my indebtedness to Dr. Thomas

Evans, Medical Officer of Health, Swansea, for invaluable criticism and advice during its preparation, and to the Editor of the *Medical Officer* for permission to publish the Fly Cartoon. The photographs were taken by Messrs. S. Chapman and J. Thomas, Swansea.

FLORENCE HORSPOOL.

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LESSON I

(*a*) Suitable Clothing

The first lesson is to teach you how to wash and dress a baby, but before we actually undress the baby for its bath I want to tell you, first of all, what kind of clothes a baby should wear, and what kind of material they should be made from.

Choice of Material.—Lightness, softness, and warmth must be the first consideration in the choice of material. Heavy clothes prevent freedom of movement of the baby's body. It is important that the body should have free play because free play of body and limbs favours growth ; for this reason all clothing should be light. A young baby's skin is soft and delicate, and is readily irritated by any clothing that is not soft. Warm clothing is absolutely necessary, because if a baby is not kept warm it loses its body heat and does not thrive.

The materials which best answer to these qualities are loosely woven flannel or knitted wool ; these also have the additional advantages of being the cheapest. They are also more porous, that is, they contain air in their meshes,

and this helps to make them warm. I have in my hands two kinds of flannel, the cheapest and the dearest; I will pass them round for you to feel the difference. The cheapest kind is more porous and soft because it contains less wool; wool tends to shrink on washing, and the best kind of flannel, which contains most wool, gets harder and thicker after repeated washing.

Articles of Clothing.—Here I have on the fire-guard all the clothing being warmed in readiness for the baby and in the order in which they have to be put on. This is the binder; it is, as you see, a strip of soft flannel, about six inches wide and nearly a yard long. One yard of flannel, as you buy it in the shop, costs 1s. a yard, and can be cut into strips to make four binders; the edges must not be hemmed or bound with silk as is sometimes done. Next is this little flannel shirt, or it can also be made of knitted wool. You will notice it has long sleeves, and it is big enough to fold over the chest and can be drawn high up in the neck with a tape; it takes one and three-quarter yards of flannel to make three of these. This is the napkin; it is made of a square piece of turkish towelling—one and a half yards makes two napkins, and baby should have at least one dozen of these—it costs 6d. a yard, it is soft and cheap and soaks up well. Napkins should always be changed as soon as wet or soiled, and should at once be put into a bucket of cold water until they can be washed. This should be done twice a day, and good yellow soap should be used and no soda. A wet napkin should not be dried and put on the baby without first being washed, this will

I. Flannel Binder. II. Woollen Shirt. III. Turkish Towelling Napkin.
IV. Long Flannel, tucked up at end. V. Gown, tucked up at end.

cause a baby to chafe, as also will a napkin that has been washed with soda.

Next comes the long flannel, and baby should have three of these. It takes one and a quarter yards to make each one, and it costs 1s. 3d. a yard. It should always be made with armholes and drawn high up in the neck, and this again should have no binding. The flannel should be turned down once with a herring-bone stitch.

Lastly comes the gown; for winter wear this should be made of soft flannel or Viyella, and for summer of cambric or white calico. Simple little gowns are the most comfortable; there is no need for frills, because a happy, clean, healthy baby is in itself beautiful, and every mother can have such a baby with care. When baby goes out it should have a soft white woollen bonnet (costs 4d. to make), a large warm woollen shawl, cosy woollen booties (cost 2d. a pair to make), and the cost of the shawl just what you can afford, but it is cheaper and better if hand made.

Baby should be put into short clothes when about two months old. The clothing will then be a little different; the binder should be left off, and in its stead a woollen knitted belt should be used, a flannel shirt or a knitted vest, and little woollen drawers with legs and feet complete to wear over the napkin, a flannel or knitted petticoat with a bodice of the same material coming high up in the neck, and a short dress of flannel cashmere or nun's veiling made high in the neck and with long sleeves; a little coat is more comfortable than a shawl when baby is taken out.

Unsuitable Clothing.—Binders made of calico or linen are unsuitable, because they are stiff and retain the wet and make the baby feel cold; they make the baby uncomfortable and chafe the skin; so also do calico shirts. Flannelette gowns, which are mostly made of cotton, have no warmth, and they are also dangerous, because flannelette very readily catches fire. Many little infants lose their lives every year through flannelette clothing catching fire. The old-fashioned stiff long binder, which is put on over the long flannel, is quite unnecessary; it is much too stiff, and is often so tight round the chest that it interferes with the movement of the chest wall and impedes the breathing. Many mothers use this binder because they think the baby's back needs support; a baby at this age should always be lying down, so the back does not require any support. A large heavy shawl or blanket put round the baby when indoors is unnecessary; it is a pity to weigh down the tiny body with unnecessary clothing.

(*b*) Washing and Dressing of the Baby by the Nurse

Preparation for the Bath.—I will now show you how to wash the baby, and I want to impress upon you the necessity of having all the clothes, bath, towels, soap, etc., ready before you start undressing the baby. The clean clothes should be put in the following order on the fireguard: first the gown, then the long flannel, next the napkin and the shirt, and last the binder, because it is the

first article of clothing to be put on. The towels should also be placed on the side of the fire-guard ; and this chair covered with clean paper on which can be placed a saucer of boiled water containing four pieces of white rag for washing the eyes, nose, and mouth, and another saucer containing a piece of good plain soap and a sponge, a powder-box with a puff—a halfpenny packet of Robin's starch mixed with one pennyworth of boracic powder makes a good powder — a small jar of vaseline, needle, cotton, thimble, and scissors. On the floor should be a small enamel basin to receive baby's dirty clothing and a small bath containing cold water, and a kettle of boiling water should be ready on the fire.

I am now going to put on this flannel apron and sit down on this low chair so that I may prepare the bath. I pour into the bath sufficient hot water to bring it to a suitable temperature. I find this out by testing it with my elbow and not with my hand ; the elbow is much more sensitive to heat than the hand.

Undressing.—I now place this warm bath-towel across my lap, take up the baby, put it lying on its back, and undress it. Notice that I draw off the clothes over the feet and so avoid soiling the face and eyes, as happens when the clothes are pulled off over the head. As I take off each dirty article of clothing I put it into the enamel basin, and not on to the floor.

Cleaning Mouth, Eyes, and Nostrils.—Now that I have the baby completely undressed I cover it with this warm towel to keep it warm while I wash its mouth, eyes, and

PREPARATION OF THE BATH.

nostrils with the pieces of clean rag. The mouth must be wiped very gently so as not to make it sore with rough handling; if the mouth is not regularly cleansed, the baby is liable to suffer from the disease called "thrush" or "white mouth." Now I cleanse the eyes, using separate pieces of rag for each eye, and wiping the eye from the nose outwards so as to prevent carrying discharge from one eye to the other. Next I take another small piece of rag and twist it up small so that I can use it to clean out the nostrils, putting one end of it into one nostril and the other into the other nostril. It is very important to cleanse the nostrils and keep them clean from discharge; stuffy nostrils make the baby get into the bad habit of breathing through its mouth, and this habit later on favours the production of the disease called "Adenoids." You notice that as I finish with each piece of rag I put it on the fire and burn it.

Washing.—Next I sponge the face with clean water, and carefully and thoroughly soap the head and wash the neck and ears; now I turn the baby round so that the head is over the bath, supporting the neck and head with my left hand, and with the right hand I sponge the head with plenty of clean water. Many mothers omit to wash and rinse the head because they are afraid of injuring the soft part, the result being that the top of the head gets caked and scurfy, and olive oil has to be used to remove the scurf; there is no danger of injuring the brain, and the head should always be washed. I now thoroughly dry the head, face, ears, and neck with a soft warm towel, and notice I pay

WASHING THE BABY.

special attention to drying between the folds of skin in the neck. The next step in the bathing is to soap the rest of the body all over with this soft small sponge and then gently lift the baby, like this, into the bath, supporting the neck and head with the left hand, the lower part of the body with the right hand, and after withdrawing the right hand I use it to thoroughly sponge the body all over and rinse off the soap ; now I lift the baby out and place it face downwards on my lap, then gently and thoroughly dry it by dabbing all over with a soft towel, and then powder the back. Now I slip off the damp towel, roll the baby gently over to lie on its back and resting on my dry flannel apron ; next I dry the rest of the body, again paying special attention to the folds of the skin, and whenever I find the least sign of redness, in the groin or elsewhere, I apply a little vaseline and finally powder the chest and abdomen.

Dressing.—I want you to carefully watch me dress the baby. I first put on the flannel binder, which I hold ready rolled up in my hand, and notice that I put it on without turning the baby ; I simply slip the roll under the back and take care to keep it straight and to go well over the hips. I do not pull it too tight, but leave sufficient room between it and the body to insert two fingers easily. I now fasten it by tacking it with a needle and cotton, protecting the baby from the prick of the needle by placing my two fingers between the binder and the skin. I will now turn the baby face downwards on my lap, and with the baby in this position I put on the rest of the clothes. The flannel

PUTTING THE BABY INTO THE BATH.

shirt comes next after the binder, and I have already told you it should have long sleeves and a drawing string in the neck ; then I put on the napkin, folded crossways, with the point hanging down tucked in between the legs. Now I tuck the long flannel in under the sides and gently roll the baby over on its back, holding its clothes in place. The long flannel is a yard long, and should reach from high up in the neck to beyond the baby's feet to allow it to be turned up. I now straighten out everything so as to avoid creases, then tie the tape in the neck of the shirt, pick up the front of the napkin between the legs and pin it to the rest of the napkin with a safety pin. I fasten the long flannel along the front with a needle and cotton, as before, inserting the fingers under it to avoid pricking the baby, turn up the bottom and pin to the rest of the flannel, just about to the level of the knees, with a safety pin. Notice how I put on the gown ; I slip it over the feet and not over the head, and baby is dressed.

(*c*) Weighing

The baby is now dressed and comfortable.

I am going to place it in the basket of this machine and weigh it. It weighs 9 lb. I want you to remember that I am going to weigh it at the end of every lesson for the next six weeks. The importance of weighing is that it is the best way of telling whether the baby is thriving ; if it gains weight regularly every week we shall know that it is thriving, but if it loses weight there will be something

TACKING ON THE FLANNEL BINDER.

the matter, and we shall have to find out what it is. An average baby about a fortnight old weighs about 9 lb., it should gain about 4 to 8 oz. each week, and at three months it should weigh about 16 lb., at six months about 20 lb., and at twelve months about 28 lb.

WEIGHING THE BABY.

LESSON II

(*a*) Washing and Dressing of the Baby by the Nurse

Bathing and Weighing. — This lesson again commences with the washing and dressing of the baby by the Nurse, but instead of explaining the why and wherefore of each step of the bathing, the girls are asked questions as to how to proceed or why it is done in this or that way, *e.g.* How the temperature of the bath should be tested ? Why and how the mouth, eyes, and nostrils should be treated ? When to immerse the baby in the bath ? What clothing should be put on the baby ? and so on. They are then asked the weight of the baby last week, and how much they think it should have gained ; the baby is then placed in the basket and the weight recorded. The chief points of the previous lesson are in this way thoroughly recapitulated, and throughout the course the previous week's lesson is recapitulated in this way.

(*b*) Feeding of the Nursing Mother

Importance of Suitable Food.—In this lesson I want to

NURSING MOTHERS HAVING DINNER AT THE WELCOME.

talk to you about the feeding of a nursing mother. It is very important that a mother who is feeding her baby on the breast should be careful to feed herself properly, as the quantity and quality of the mother's milk is dependent on the kind of food she eats and upon her general health. A suitably fed mother is able to supply her child with all the milk it requires for healthy growth, and also to maintain her own health at the same time. A poorly fed mother cannot provide her child with sufficient milk of good quality to enable the child to grow, or if she does, it is at the cost of her own health—the food she takes is chiefly converted into milk, leaving but little for the maintenance of her own body; a badly fed mother is also more liable to lose her milk before the proper time for weaning the child.

Suitable Food.—The food of a nursing mother should be plain, nourishing, and digestible, such as home-made brown and white bread, butter or margarine, cheese, eggs, soup, fresh fish (boiled or baked), boiled, stewed, or roast meat, bacon, well-cooked fresh vegetables, fresh fruit, boiled suet puddings, milk and milk puddings (such as rice, sago, tapioca, etc.), cocoa, gruel, and porridge.

Unsuitable Foods.—Indigestible foods should not be taken, *e.g.* tinned foods, pickled foods, and all kinds of sauces, all highly seasoned dishes, stuffing, curries, faggots, fried fish and chips, pork, new bread, new cakes, beer, stout, spirits, and too much tea. All these are liable to produce indigestion in the mother, and to alter the quality of the milk and upset the baby.

Sloppy Foods.—A mother is usually more thirsty when she is nursing, and therefore needs more sloppy foods, but it is wrong to quench the thirst with tea, beer, or even stout. Many mothers think that stout helps to produce plenty of milk, but this, like beer and spirits, contains alcohol and is harmful both to the baby and mother. The sloppy foods should be taken in the form of soups, milky puddings, gruel made with milk, eggs beaten up with milk ; a moderate quantity of tea or cocoa with plenty of milk can also be taken.

I daresay you have already attended the Cookery School and have been taught how to prepare most ordinary plain foods, but it will help you if I show you again how some of these ordinary foods suitable for the nursing mother, such as gruel, soups, stews, and milk puddings are made.

Gruel.—Place one tablespoonful of oatmeal or groats in a basin, gradually add one wine-glassful of cold water, and mix into a smooth paste ; put this into a saucepan containing a pint of boiling milk or equal parts of milk and water ; place the saucepan on the fire and stir the gruel with a spoon for twenty minutes ; then add a little salt and, if desired, some sugar. A nursing mother should take a basin of gruel for supper every evening.

Soup.—Soup is cheaply and easily made. Buy two-pennyworth of bones from the butcher, chop up small, and put into a saucepan with a quart of cold water, add salt, place saucepan on the fire, bring up to the boil, then allow to simmer for four hours, strain off the stock into a

basin and leave to get cold over night; next day skim off the fat, buy one pennyworth of mixed fresh vegetables, scrape, cut small, wash, and then put them into the saucepan with the stock, and boil until the vegetables are tender. For a change, lentils, beans, or peas can be used instead of vegetables; these make a cheap and nourishing soup.

Stew.—Cheap pieces of beef or mutton at about 6d. a pound make good stew, and it is much more economical to make stew than to run at the last minute to the butcher to buy chops and steak at 1s. 2d. a pound. Cut the meat into small pieces, lightly flour them. Put some dripping into a saucepan, place over the fire, and when the dripping is quite hot put in the piece of meat, along with the slices of an onion; keep on the fire until meat and onion is brown, remove meat from the saucepan into a dish, then add a little flour to the dripping and onion, mix well, and add enough water to cover the meat after it is put back. Stir and boil, then let it cool a little, return meat to the saucepan, season with pepper and salt, and simmer for one and a half hours.

Milk Puddings (rice, sago, and tapioca, etc.).—Lightly cover the bottom of a pie-dish with rice or other ingredient, then pour in sufficient cold water twice to wash it clean; add sugar to flavour, and fill up the dish with new milk—if skimmed milk has to be used, put in a piece of butter or some finely-chopped suet—then cook slowly in a warm (not too hot) oven.

LESSON III

(*a*) Washing and Dressing of the Baby by a Pupil

This lesson commences with the bathing of the baby by a pupil, with one or two of the other pupils assisting her, the nurse looking on. One girl puts everything ready for use, one pours out the hot water, another tests its temperature with her elbow, and so on. The pupil who is to do the actual bathing sits on a low stool, and another pupil places a warm bath-towel across her lap, and then the baby is handed to her and she commences to undress it.

All the other pupils are watching, and are encouraged to criticise and prompt when any step in the undressing or bathing of the baby is not properly done by the little mother-nurse.

The previous lesson on the feeding of the nursing mother is also shortly recapitulated by means of questions put to the girls.

(*b*) Natural or Breast Feeding

Mother's Milk the Best.—To-day I want to speak to

you about the feeding of the baby. There is only one kind of food which is properly suited for the baby, and that is milk from the mother's breast. This is the food nature intended for it; the baby gets it fresh and clean; it is always ready and requires no preparation; it is perfectly sterile, *i.e.* it contains no germs such as those that are liable to get into cows' milk from different sources from the time of milking to the time it enters the baby's bottle. These germs cause diseases such as diarrhœa, which is one of the most fatal of all the diseases of infant life. Mother's milk also contains all the constituents in the right proportion during the whole suckling period.

Constituents of Milk.—The constituents of milk are curd or proteid, cream or fat, whey, which consists chiefly of water with milk-sugar and a little salt, in the proportions shown in the table:

Constituents of Human Milk.		Percentages.
Curd (proteid)		2·0
Cream (fat)		3·5
Whey	milk-sugar	7·0
	salt	2
	water	87·3
		100·0

I want you to look at this tall, narrow flask containing cows' milk, which has been kept over night in it. Notice, first of all, the colour of the milk; it is white, but on the top is a small layer which is of a more yellow colour; that

is the cream which has risen to the top after standing over night. Milksellers sometimes colour their milk yellow with artificial colouring to make it look more creamy, and so deceive the purchaser. It is not altogether the fault of the milkman that he deceives in this way; he often does so because mothers insist on getting yellow-looking milk, and when you consider that the natural colour of milk is white, what is the milkman to do but add artificial colouring, or else he loses his customers.

The Action of Rennet and Gastric Juices.—I will now take off the layer of cream with a spoon. In this bottle I have a liquid called "Rennet." I will explain to you later what rennet is. I am going to pour a little of it into the milk, and please notice, after I have added it, the milk has become curdled, but there is still some liquid mixed up with the curd. I will separate the curd and the liquid by straining it through this piece of muslin; the muslin lets the liquid through, but keeps back the curd. So in this simple way I have split up the milk into its three chief constituents—the cream in the spoon, the curd in the muslin, and the whey in this flask. This rennet consists of the natural juices of the stomach of a calf, and what you saw happening in the tall vessel is what also occurs in the stomach of a calf after it has taken milk, *i.e.* the milk is curdled; and the same thing also takes place in a child's stomach after it has taken a feed, and the milk gets into contact with the natural juices of its stomach. You will no longer wonder why sometimes baby cries after you have given it a good feed of milk; it is because

you have given it too much, and it has a big hard mass of curd in its stomach which gives it the pain of indigestion.

Breast Feeding.—You will remember that in the last lesson I told you that the quantity and quality of mother's milk is dependent on the feeding, habits, and health of the mother. A healthy and suitably fed mother can provide milk for her baby for a period of nine to twelve months without injury to her own health, and there is no justification for weaning a baby under the period of nine months so long as the mother has any milk, except for some very severe illness such as Consumption; a mother, for instance, who is suffering from Scarlet Fever can suckle her child without injury to herself or baby.

Regular Feeding Times.—Baby should be put to the breast regularly every two hours, between the hours of 5 A.M. and 11 P.M. during the first three months, and every three hours during the remainder of the suckling period; it should not be disturbed during the night between these hours. A baby who is properly cared for and properly thriving should spend most of the time in the intervals between the feeds in sleep. A baby who has been trained in good habits usually wakes up at the right time for its feeds; if it does not do so, it should be roused for its feeds. A baby should not be fed between the proper feeding time even if it is awake and crying.

Crying.—A baby generally cries with pain caused by indigestion, and the most common cause of indigestion in the baby is irregular and too frequent feeding, so what the baby's stomach needs is rest and not more food and

over-feeding to cause more indigestion. The signs of indigestion in the baby are crying, drawing up of the legs, flatulence, and the bringing up of curdled milk. A baby may cry because it is thirsty, and sips of cool boiled water may be given. It may cry because the napkin is soiled and needs changing, and it may cry because it feels uncomfortable and its position needs changing, or it may be in a stuffy ill-ventilated room and so needs fresh air. It should not be taken for granted when baby cries during the interval between feed times that it cries because it needs the breast ; this may be so if the mother's milk is insufficient in quantity, but it may be also because the milk is too much in quantity and the baby is overfed.

Too early Weaning.—Under these circumstances the baby is not gaining weight and thriving, and the mother comes to the conclusion that her milk does not agree with baby, and she decides to wean it. This is a very wrong procedure to adopt. Before ever deciding to wean a baby before the proper time, which is when the baby is nine months old, a doctor should be consulted who will carry out what is called a test feed weighing. He does it by weighing the baby on accurate scales and then tells the mother to put the baby on the breast, and after it has finished suckling he again weighs the baby, and the difference between the two weighings is the amount of the milk the child has swallowed. The doctor knows what weight of milk the baby should get from the breast at one feed, and if it has been getting too little or too much he directs the mother to supplement the breast feeding with cows' milk

to the required extent, or to limit the child's suckling time.

(*c*) Test Feed Weighing

About a quarter of an hour before the end of the lesson the baby is taken from the mother and placed in the scales and weighed by one of the girls. Then the mother puts the baby on the breast, and after it has finished suckling it is again weighed; the girls are in this way introduced to the importance of test feed weighing before deciding to wean a baby.

LESSON IV

(*a*) Washing and Dressing of the Baby by a Pupil

This, like every other lesson during the course, commences with the washing of the baby. At the finish the baby, as usual, is put on a scales to be weighed. Great interest is always taken in the weighing and in the amount of increase week by week. This weekly weighing accustoms them to the knowledge of the weight of a healthy baby and the amount of natural weekly increase. The value of regular weighing as the best and only certain means that a mother has of knowing whether her baby is thriving is impressed upon them in every lesson. The previous lesson on breast feeding is recapitulated.

(*b*) Distribution and Storage of Milk

Cows' Milk the best Substitute for Mother's Milk.—In the last lesson I told you that a baby is not to be weaned from the breast as long as the mother has any milk and the child is able to suckle the breast, and that if the mother

has not sufficient milk for the baby the proper course to take is to combine breast feeding with artificial feeding. However, there are circumstances when breast feeding is not practicable and artificial feeding has to be used, unsatisfactory and even dangerous as it is. The best substitute for mother's milk is cows' milk.

Disadvantages of Cows' Milk.—It has many disadvantages; one of the chief of these is that it cannot be procured fresh and clean for the baby when it requires it like mother's milk. The greater part of the milk that is sold in Swansea comes by rail from as far distant as Pembrokeshire and Carmarthenshire. The milk delivered in the morning has been milked from the cows about four or five o'clock the previous afternoon, so it cannot be very fresh.

It is not very clean; it contains cow-dung from dirty cattle and dirty sheds, and dust that easily gets in under the badly fitting lid of the churn during the journey, dust and dirt carried in through the open mouth of the churn when the milkman measures out milk from the churn or milk-can. After it has been received into the jug at the home it is often kept by careless mothers in open uncovered jugs in warm dirty kitchens, and the dust falls into it and the flies that have come into the house from the dust-heap fall into it and drown in it.

Warm Milk a good Food for Germs.—In the last lesson I told you that mother's milk is always sterile, *i.e.* it contains no germs. Cows' milk that has been milked, delivered, and stored in this way is not sterile, but is teeming with germs, though you cannot see them; and in

the hot weather this is particularly so because milk of a slightly warm temperature is an ideal food for germs, and they multiply in it at a very rapid pace. For this reason cold milk is better than warm milk; mothers make a mistake when they insist on getting warm milk from the milkman; it is more important that they should insist on getting cool milk. It is the growth of these germs that cause the souring of the milk. This milk is given by the mothers to the babies, and, during the summer months especially, scores of babies become very ill and suffer from diarrhœa, and many of them die. Every careful mother should therefore do everything she possibly can to lessen the dangers that arise from milk that is not fresh and clean.

Clean Milk.—The ideal way of getting clean, germless milk for the baby would be to buy milk from a farm where scrupulous attention is given to the cleanliness of the cowsheds, to the grooming of the cows, to the washing of the udders, to milking with clean hands, to the use of proper milk-pails, and where the milk is then directly put into clean bottles which are corked so that no dirt can get into them, and are kept during the whole time of conveyance from the farm to the house in properly cooled cases, so as to keep down the temperature and prevent the growth of any germ that may, even in spite of every precaution, get into the milk.

Beware of Dirty Milksellers.—Unfortunately there is no such ideal milk to be got in Swansea. It is therefore important that every mother should try and get the best

kind of milk that can be got under the circumstances. She can do this by purchasing milk from a milkman who handles his milk in a clean manner, who is himself clean in person, who takes care to keep his churns and milk-cans and milk-measures clean, who does not serve his milk from churns whose lids have to be taken off and the milkman's arm put into the churns to get out the milk, or who keeps his measures exposed on the side of the cart or on the handle of the milk-can, or, as is sometimes seen, even on his coat pocket. She should also try and find out whether the dairy where the milkman stores his milk at his shop is clean, and whether he keeps a milk-cooler.

Cleanliness of the Milk-Jug.—She should also pay special attention to the cleanliness of her own milk-jug. The milk-jug after all the milk that was in it has been used should be immediately put under the cold-water tap (not filled with hot water, because this makes the old milk stick to the jug); the cold water should then be poured away and the jug filled with boiling water and a piece of soda put in, let to stand for a few minutes, then washed both inside and out with a mop kept specially for the purpose, the hot water emptied out, and the jug again put under the cold-water tap and left full until the milkman calls, when the water is just poured away; it is then ready to receive the milk; there is no necessity to wipe with a cloth as the cleanest cloth is not as clean as the clean water. As soon as received, the milk should be strained through clean muslin into another clean cold jug.

Storage of the Milk-Jug.—If the milk is warm when it

is received it should be cooled down by placing the jug in a large basin of cold water, and the jug and basin then placed in the coolest place in the house, away from sinks, drains, and ash-bins. You know now how important it is to keep the milk cool ; it is because germs cannot grow so well in cold milk. If the jug has no lid the mouth should be covered with a clean piece of book muslin weighed down at the corners with small marbles so as to protect the milk from dust and flies.

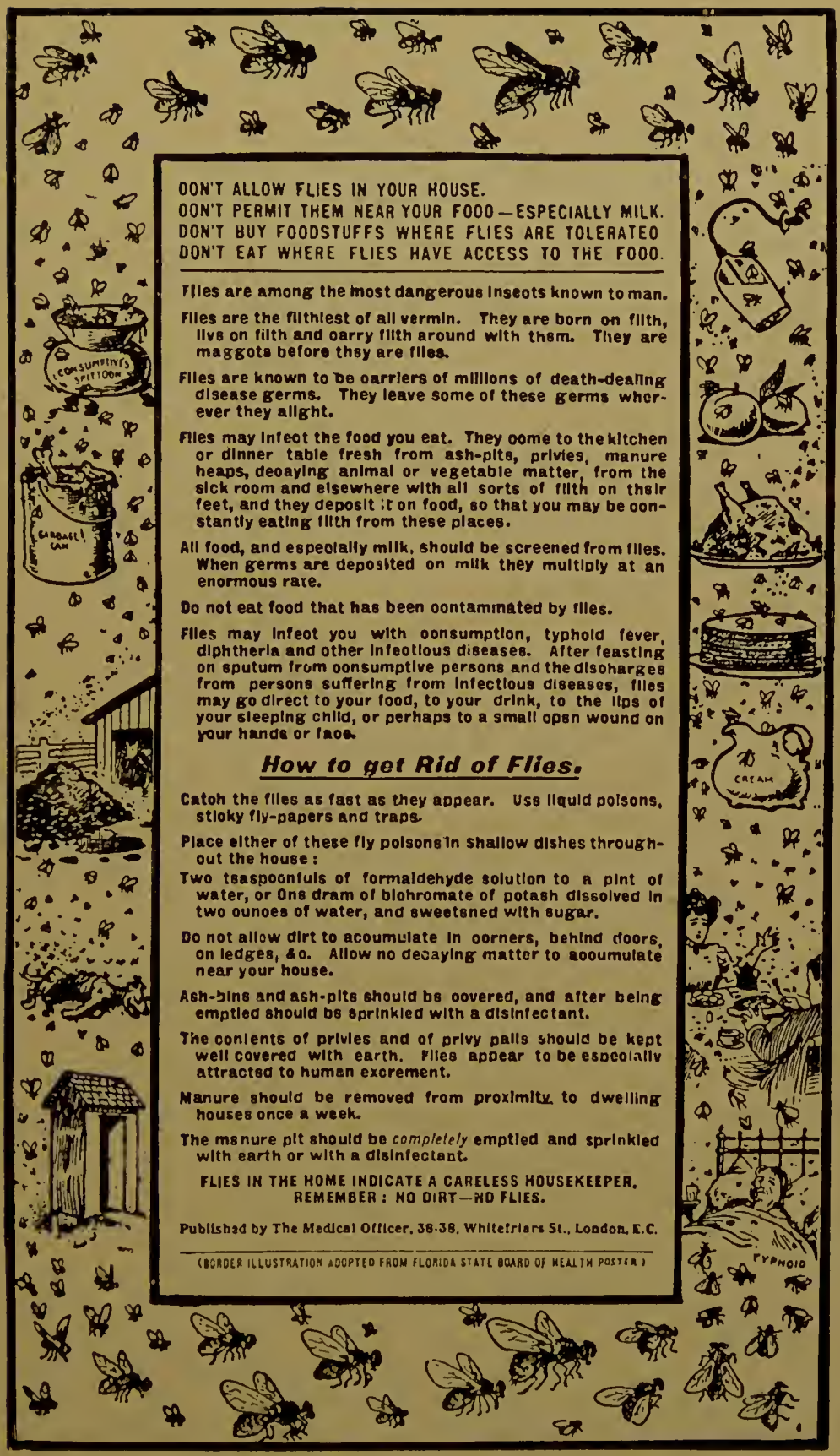
(*c*) Flies as Carriers of Disease

Necessity of a Pantry.—Next I want to speak to you about flies as a danger to health. I have already impressed upon you the importance of covering the milk-jug so as to prevent flies and dust getting into it. Flies carry disease germs with them and deposit them in the form of vomit or footprints on any food that lies about uncovered on tables, shelves, or in open jugs. It is therefore very important that in every house there should be a pantry or food cupboard where all food can be stored between meal-times. Food should never be left on the table from meal to meal. The pantry or food cupboard should be in the coolest place possible, and communicating with the outside air.

Breeding Place.—The best preventive against flies in the house is cleanliness. The house should be kept clean by dusting away with a damp duster all the dust that tends to accumulate on corners or ledges, behind doors,

and the house generally should be washed and cleaned. If in spite of scrupulous attention to cleanliness in the house and the proper covering of food, the house is still troubled with flies then there must be some breeding ground for them in the backyard or not far distant, such as a refuse heap, an uncovered ash-pit or ash-bin, an adjoining stable or dirty yard, or some other form of nuisance. Filth is food for flies; they breed best in dirty surroundings. It only takes a fortnight for the egg of a fly to develop into a full-grown fly, and during this time it passes through the stage of maggot, so all maggots should be destroyed. A great deal of danger to health arises because housewives are careless in the way they deal with house refuse; they omit to put it out so that the scavengers can cart it away, or they throw it out anywhere, or store it in a pail without a cover. As much of the house refuse as can be conveniently burnt should be put on the fire. Whenever a house is troubled with flies all breeding places should be looked for and removed, and if necessary complaint should be made to the Health Department. If they cannot be stamped out in this way an attempt should be made to kill the flies by means of sticky fly-papers, fly-traps or some poison such as Formalin mixed up with a little milk and placed in a saucer, care being taken to keep the saucer out of the reach of little children.

I am now going to give each one of you a copy of this handbill which illustrates the dangers that arise from flies. You see the consumptive's spit-cup, the uncovered refuse pail with a bone and other refuse in it, a dung-heap, a



DON'T ALLOW FLIES IN YOUR HOUSE.
DON'T PERMIT THEM NEAR YOUR FOOD—ESPECIALLY MILK.
DON'T BUY FOODSTUFFS WHERE FLIES ARE TOLERATED
DON'T EAT WHERE FLIES HAVE ACCESS TO THE FOOD.

Flies are among the most dangerous insects known to man.

Flies are the filthiest of all vermin. They are born on filth, live on filth and carry filth around with them. They are maggots before they are flies.

Flies are known to be carriers of millions of death-dealing disease germs. They leave some of these germs wherever they alight.

Flies may infect the food you eat. They come to the kitchen or dinner table fresh from ash-pits, privies, manure heaps, decaying animal or vegetable matter, from the sick room and elsewhere with all sorts of filth on their feet, and they deposit it on food, so that you may be constantly eating filth from these places.

All food, and especially milk, should be screened from flies. When germs are deposited on milk they multiply at an enormous rate.

Do not eat food that has been contaminated by flies.

Flies may infect you with consumption, typhoid fever, diphtheria and other infectious diseases. After feasting on sputum from consumptive persons and the discharges from persons suffering from infectious diseases, flies may go direct to your food, to your drink, to the lips of your sleeping child, or perhaps to a small open wound on your hands or face.

How to get Rid of Flies.

Catch the flies as fast as they appear. Use liquid poisons, sticky fly-papers and traps.

Place either of these fly poisons in shallow dishes throughout the house:

Two teaspoonfuls of formaldehyde solution to a pint of water, or One dram of bichromate of potash dissolved in two ounces of water, and sweetened with sugar.

Do not allow dirt to accumulate in corners, behind doors, on ledges, &c. Allow no decaying matter to accumulate near your house.

Ash-bins and ash-pits should be covered, and after being emptied should be sprinkled with a disinfectant.

The contents of privies and of privy pails should be kept well covered with earth. Flies appear to be especially attracted to human excrement.

Manure should be removed from proximity to dwelling houses once a week.

The manure pit should be *completely* emptied and sprinkled with earth or with a disinfectant.

FLIES IN THE HOME INDICATE A CARELESS HOUSEKEEPER.
REMEMBER: NO DIRT—NO FLIES.

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(BORDER ILLUSTRATION ADOPTED FROM FLORIDA STATE BOARD OF HEALTH POSTER.)

dead dog, a privy, a patient in bed ill with typhoid fever, around them a lot of flies moving from them and carrying the germs on to the food on the dining table, the cream-jug, cake, cold chicken, apples, and baby's feeding bottle.

LESSON V

(*a*) Washing and Dressing of the Baby by a Pupil

(*b*) Artificial Feeding

Humanised Milk.—You remember that in a previous lesson I told you that milk is made up of curd (proteid), cream (fat), and whey (containing the water, salt, and sugar), and that the best substitute for mother's milk is cows' milk—but it has the disadvantage that it is not the same strength in all its parts as mother's milk. Cows' milk contains twice as much curd as human milk, about the same amount of fat, but less sugar. The curd of cows' milk is not only greater in amount, but is also less flaky, and when it gets into the baby's stomach a big hard mass of curd forms which the baby cannot digest. For this reason a baby cannot take raw cows' milk, and the milk has to be humanised, *i.e.* made more like human milk, before the baby can take it. This is usually done by adding water in a certain proportion; this lessens the amount of curd in the milk, but unfortunately, at the same time it also lessens the amount of sugar, and the

amount of sugar in cows' milk is already too little in comparison with mother's milk, and so sugar has to be added.

Constituents.	Human. Proportions in 100 parts.	Cows'. Proportions in 100 parts.
Curd (proteid)	2·0	4·0
Cream (fat)	3·5	3·5
Whey — Milk-sugar . . .	7·0	4·0
Whey — Salt	0·2	0·2
Whey — Water	87·3	88·3

The amount of cream in cows' milk is only just equal to the cream in mother's milk, and so it is also necessary, after the water has been added, to add a little cream to the milk and water, to give it the same strength of cream as mother's milk. The amount of water that has to be added to the cows' milk varies according to the age of the child, and this table gives the amount of milk and amount of water that has to be added at various ages. I am going to give each one of you a copy of this Table, which you must keep so that you can refer to it whenever you want to know how to make up a baby's feed :

Age of Child.	Time between Meals.	Amount of Milk for each Feed.	Amount of Water for each Feed.	Amount of Milk required each Day.
1 week .	2 hours	1 Dessertspoonful	2 Tablespoonfuls	¼ pint
2 to 4 weeks	,,	1 Tablespoonful	3 ,,	¼ to ½ pint
1 to 3 months	,,	2 Tablespoonfuls	3 ,,	½ to ¾ pint
3 to 6 ,,	3 hours	3 ,,	3 ,,	¾ to 1 pint
6 to 9 ,,	,,	8 to 13 ,,	4 to 5 ,,	1½ to 2 pints

CLEANING A BABY'S BOTTLE.

The amount of sugar to be added to each feed is a lump of half an inch square for a young baby and a lump one inch square for an older baby. Milk-sugar is preferable, and this can be bought at any chemist's shop. The amount of cream is a small teaspoonful, or where nice fresh cream cannot be got a small piece of butter the size of a pea should be shaken up in each feed. The table also shows how often the child should be fed at various ages; after three months the child should be fed every three hours, and the amount of the feed should be twice as many tablespoonfuls as the month of age, *e.g.* a baby of four months should take eight tablespoonfuls of the prepared feed and no more.

Preparation of Feed.—You have been told that most ordinary milk contains germs, and as germs are harmful for the child, it is advisable to kill them before giving the milk to the baby. The best method of killing germs is by boiling, but the boiling of milk partly destroys the nutritious quality of milk. Scalding also kills most germs, and it does not injure the nutrition of the milk to the same extent. The best way of scalding milk is to put the jug containing the milk into a saucepan half full of boiling water, the jug to be covered with a lid and the water kept boiling for twenty minutes. The milk should be stirred with a clean spoon occasionally to prevent the formation of the skin on the top of the milk. This brings the temperature of the milk up sufficiently high to kill most of the injurious germs. A double saucepan, which can be bought in any shop, is more convenient for the purpose of scalding

the milk; the milk is placed in the inside saucepan and the boiling water in the outer saucepan. After scalding the jug should be taken out of the saucepan and placed in a large basin of cold water to cool rapidly. The proper way of preparing a feed and adding the correct amount of water is to put the cows' milk into a boat-shaped bottle or feeder which is marked in tablespoonfuls. You will find from the feeding table how many tablespoonfuls of milk you require; for instance, if the baby is four weeks old you require one tablespoonful of milk and three tablespoonfuls of water, so you pour in the milk up to the one tablespoonful mark and the water up to where the four tablespoonfuls is marked, then add a small teaspoonful of cream or a small piece of butter about the size of a pea and a small piece of sugar.

Best Kind of Feeding Bottle.—I want you to notice that I told you to use a boat-shaped bottle; I did this because it is the only kind of bottle that should be used. It is the best because it can be easily cleansed; the brush goes in more easily and gets more thoroughly in touch with the inside of the bottle. It has not got the long tube with the teat at the end of it; the long tube is very dangerous because it cannot be cleansed and so germs grow there; germs make the milk sour and the child swallows them with the milk, and so gets diarrhœa. The baby should never be fed with a long-tubed bottle. It is however very often used because it saves the mother the trouble of holding the bottle while the child feeds. Holding the bottle is in itself good for the baby because the mother then sees that

the baby takes the whole of the milk at one feed, instead of letting it prolong the feeding indefinitely as happens when the long-tubed bottle is used, the baby taking a few pulls and dropping off to sleep with the teat in its mouth, and so getting an opportunity of breathing through the mouth, then waking up and taking a few more pulls, again dropping off to sleep, and so on. The child also has to suckle harder at the teat of a feeder than at the teat of a long-tubed bottle, and hard sucking is good for a baby; it makes it use its jaws, and so helps them to develop, and in this way also helping the growth of the teeth which are forming in the jaw.

Cleaning of the Bottle.—Just as you were told in the last lesson that it is very important to receive and store milk in properly cleansed jugs, so it is also important to keep baby's feeder perfectly clean, and the mother should never neglect the cleanliness of her own hands; she cannot get clean jugs, bottle, and milk if she handles them with dirty hands. As soon as the baby has finished its feed, and you have put it back and made it comfortable in its cot, you should immediately rinse the bottle out with cold water, not hot water, because hot water will make the milk stick to the bottle, and after that place it in a basin of hot water to which soda has been added; thoroughly scrub inside and out, especially the neck of the bottle, then rinse it under the cold-water tap and leave it in a basin of cold water, cover with a plate or piece of muslin; it is then ready for the next feed. The teat should be cleansed in the same way, turning it first of

all inside out. It is very important that the bottle and teat should be cleansed in this way immediately after every feed, and not left until it is required for the next feed, when it is more difficult to clean. Night and morning the bottle and teat should be boiled after the washing in hot soda water, so as to sterilise it. As you have already been told, to sterilise means to free from germs, and as boiling kills all germs, it is the simplest method we have of sterilising.

Dry Milk Foods.—Just as there are circumstances when cows' milk has to be used instead of mother's milk, so there are circumstances when some other food has to be substituted for cows' milk. One of the special occasions when it is justifiable to use some other food than ordinary cows' milk is during the hot weather, when it is impossible with our present milk-supply to keep milk from souring. Very often at such times of the year milk, even at the time it is received into the home, is so full of germs that it soon gets sour, especially where there is no place to store and keep it cool in the home. The best substitute for ordinary milk is one of the forms of dry milk, *e.g.* Glaxo, Allenbury's Food, and Cow and Gate, which are sold in the form of powder contained in tins with tight-fitting lids. To make milk out of this it is only necessary to add water in proper proportions along with sugar and a little salt. There is no harm in feeding a baby with dried milk for a few months during the summer; it has the great advantage that it is always free from germs, because during its preparation dried milk has to be heated, and so all germs are killed.

It is, however, not safe to keep a baby on these substitutes for many months, unless it is also given some raw meat juice to prevent the disease called Scurvy.

No other kind of Food wanted.—I have now told you all you need know about the feeding of a healthy baby, and unless there is some special reason, a baby should not be fed in any other way than with breast milk or cows' milk for the first nine months of its life. It is, however, a common practice for mothers to give young babies other foods, such as thin oatmeal gruel, pap made with baked flour mixed with milk, bread and milk, arrowroot, biscuits, patent foods, or bits of anything from an ordinary meal, such as potatoes, bread and butter, and tea. This is not only unnecessary, but harmful, as these foods contain starch, and a baby's stomach at this age cannot digest starchy foods. A child after six months of age may, however, be given a bone to suck, provided the bone is big enough to prevent the baby getting it entirely in its mouth and so run the risk of choking, or it may be given a piece of hard crust to suck. You may have noticed that a baby always wants to suck something; if it can get nothing else, it will suck its fingers, and it will keep a dummy in its mouth all day long. An occasional sucking of a bone or hard crust is good; it helps to develop the jaws.

The Dummy.—Sucking a dummy or comforter is bad. The child gets into the habit of constantly keeping it in its mouth and sucking, and goes to sleep with it in its mouth, and so gets the opportunity to breathe through the mouth, and the habit of mouth-breathing is established

BABY ASLEEP WITH DUMMY JUST DROPPED OUT OF THE MOUTH—SHOWS HOW MOUTH-BREATHING IS ESTABLISHED BY THE USE OF DUMMY.

just in the same way as happens when the baby is using a long-tubed bottle. Once mouth-breathing is established the nostrils are no longer used for breathing, and any organ which is not used stops growing and gets unhealthy. One of the signs of unhealthiness in the nose is the growth of what are called "Adenoids" at the back of the nasal passages. Along with improper growth of the nose there is also improper growth of the upper jaw, and the teeth do not get sufficient room to develop, and so grow irregular, and are more liable to decay. The dummy also often falls on the floor, and is picked up again and, without being properly cleansed, is put back in the baby's mouth, carrying with it dirt and germs.

Weaning.—When baby is nine months old, weaning should be commenced gradually, but it is not wise to wean the baby during the hot summer months. This is the "danger" time of summer diarrhœa, and a change from mother's milk to cows' milk at this time makes the child more liable to this disease. After the baby is weaned, the chief article of diet should be fresh cows' milk; it may also have a little broth made from fresh meat, a few stale breadcrumbs soaked in red gravy, a little well-cooked milk pudding, bread and milk, fruit juice, and small pieces of bread and butter. This is all baby requires until it is one year old.

(*c*) Baby's Ailments

You know that a baby is thriving if it takes its food well, gains regularly in weight, sleeps well, is contented

and happy, and its flesh is pink and firm. The bowels should act once or twice daily, the motion should be of good colour, not green, or have lumps of undigested curd, or smell badly.

Constipation.—The best preventive for constipation is to get the child from the first into regular habits. After the first month, baby should be held out over a small vessel morning and evening; this will induce habits of cleanliness and get the bowels into regular condition.

Teething.—Baby usually begins to cut its first teeth when about six months old. The first to come are usually the two lower front teeth, then the four upper front teeth, next the two side front teeth of the lower jaw, then the first upper and lower back teeth, and the whole twenty milk teeth should be cut when baby is about two and a half years old. Sometimes baby is troublesome when cutting its teeth, but if it has been fed properly and cared for well, there is not much fear of any serious illness during this time.

Bronchitis and Convulsions.—Many mothers think it is natural for babies to suffer from bronchitis and convulsions when cutting their teeth; this is wrong. If a baby does have a convulsion, there is probably some other cause. It has had some food that disagreed with it or has been fed too often or fed irregularly. Soothing syrups and teething powders should never be given to a baby, as they all contain poisonous drugs and do not give the baby natural sleep; they simply dull the brain and ruin the

digestion, and though they keep the child quiet for a time they make it more ill.

If a baby through improper feeding or some other cause does not thrive and gets ill it should be taken to a doctor.

Vaccination.—Every baby should be vaccinated. Vaccination protects it against small-pox, and small-pox is a very deadly disease. On the third day after vaccination a small pimple usually appears, this later turns into a watery blister, and the arm swells and becomes tender and painful; this is its natural course, but many mothers become alarmed, pull off the boric lint dressing, and apply ointments; this is very wrong, and makes the arm much worse. If the dressing is allowed to remain on and not interfered with, the swelling and tenderness gradually disappear, and the arm gets quite well. It is a mistake to put down all the illnesses that occur to baby at any time to vaccination itself; it has nothing whatever to do with it.

LESSON VI

(*a*) Washing and Dressing of the Baby by a Pupil, and Recapitulation of Previous Lesson

(*b*) Special Foods for Ailing Babies

In the last lesson, when speaking of the ailments of babies, I told you that when the baby is not thriving a doctor should be consulted. The doctor often finds it necessary to modify the baby's food. To-day I am first of all going to show you how to prepare some of the foods doctors order to be given to sick babies.

Peptonised Milk.—To one pint of milk add a quarter of a teaspoonful of bicarbonate of soda, one tube of Fairchild's peptonising powder, and four ounces of water. Heat it to a temperature of 110° F., let it stand from ten to fifty minutes, according to the degree of peptonising required, then heat to 212° F. (boiling-point) in order to stop the peptonising action, and dilute as required with boiling water.

Barley Water.—Well wash one tablespoonful of pearl barley, add one and a quarter pints of cold water, bring

it to boiling-point, and let it simmer for two hours ; while hot, strain through clean muslin into a freshly scalded jug ; cover loosely with muslin ; cool rapidly ; keep in a cool airy safe. Barley water must be made twice daily.

Albumen Water.—Take the white of a new-laid egg, cut into two or three portions with a perfectly clean pair of scissors, add half a pint of cooled boiled water, pour into a broad-necked bottle, and shake thoroughly for five minutes. Strain through clean muslin into a perfectly clean cold jug, cover loosely, and keep in a cool airy safe.

Whey.—Take one pint of fresh milk, heat to 100° F., add one teaspoonful of rennet ; after addition of rennet, stir thoroughly into the milk and allow it to stand until a solid mass of curd is formed ; break up the curd with a fork ; strain whey off through clean muslin into a clean jug.

Raw Meat Juice.—Take two ounces of lean beef, mince finely, place in a cup with enough cold water to cover, add a little salt. Stand for two hours in a cool cupboard, then strain through clean muslin. This will not keep long and should be made fresh twice daily.

Book muslin, which is used for this purpose, costs 2d. per yard, and should be washed, boiled, and ironed with a very hot iron each time before using. This is to make it perfectly sterile.

(*c*) Sleep and Fresh Air

I want next to say a few words to you on the importance of sleep and fresh air. I have already told you in previous

lessons that in the interval between feeding times a young baby under three months of age should spend most of its time in sleep. Until a baby is one year old it requires two sleeps a day—a long one in the morning and a short one in the afternoon. It should be kept awake for one hour before bed-time, which should be about 6 P.M. After being put to bed it need only be disturbed at 10.30, to be changed and made comfortable and have its last feed, and it should then sleep on until 5 in the morning, when it needs changing and feeding again. A baby should never be rocked to sleep; it should be put in its cot and left alone; it will soon get into good habits and go to sleep. The determination to get the baby into regular habits in all things from the beginning soon repays the little trouble and patience needed, and this is specially so as regards sleep.

Baby should sleep alone.—Baby should sleep alone in a cot from the day it is born, because a baby may be suffocated through overlaying if in bed with its parents; neither baby nor mother sleeps as well or comfortably in the same bed, and baby does not get sufficient air, as it gets low down into the bed under the heavy bed-clothes and has to breathe in all the impurities of the bed and bed-clothing. A baby sleeping alone rests and sleeps better, because it is not disturbed by other people moving. Cot bed-clothes also are small and light, and so can be more frequently washed.

The Cot and Bedding.—A cot or cradle costs very little, but some mothers cannot afford even these, so a banana

crate, which is the shape of a cradle, can be bought from any fruiterer at a cost of 2d. The banana crate can be made into a pretty little cradle for very little money. This little cot I have before me here has been made from a crate by covering it with green and white art muslin costing 2d. a yard—two and a half yards are required. For the bed two yards of unbleached calico at 3d. a yard can be stitched up and filled with finely chopped straw. This makes a comfortable, clean, soft bed, and can be renewed every week by emptying out the old straw, washing the cover, and filling up freshly. In this way the bed, which is liable to be wetted, can be kept sweet. If an ordinary milpuff bed is used, it should be covered with a mackintosh so as to prevent it getting wet through, and over this a small blanket for baby to lie on. A very soft tiny pillow should be used; it should not be large or thick, as the head and body should lie as flat as possible. The covering should be light and warm. This cot has two small blankets, and the cot-cover is made from art muslin. When the weather is cold, a covered hot-water bottle should be put in the cot, and special care must be taken to see that the stopper is securely fastened in order to prevent the hot water from dripping out, which might scald the baby. In the hot weather it is best to cover the cot all over with a piece of muslin to prevent flies and dust settling on the baby. Flies, as you have already been told, carry disease germs, and are dangerous if they get near the baby or the food. Where the baby has to be kept in the living-room during the day, it is best to stand the cot

BABY'S COT MADE FROM A BANANA CRATE.

on a firm wooden box, in a corner away from the fire which is free from draught, but where there is plenty of fresh air. A banana cot is cheap, light, and easy to carry up and down stairs, where it can be placed on two chairs close to the mother's bed at night. As soon as the baby is taken up in the morning the bedding should be well aired, out of doors in the sun in the summer and by the fire when the weather is wet.

Fresh Air.—Where there is a choice of rooms for the baby to sleep in, it should be the most airy and sunny room in the house, and the windows of the room should be always kept open at the top. The baby should be accustomed to the open window from its birth; and even in the coldest weather, if the baby is not in a draught, the window can be safely left open night and day, and the chimneys should never be stuffed up in the bedroom. It is most essential for babies to have plenty of fresh air—like plants, they thrive in sunshine and air. It is not always possible for the mother of a large family to take baby out as often as it is necessary for the baby to go outdoors, but in the warm weather it can be dressed in its outdoor clothes and put to sleep lying down flat on a pillow in its perambulator in the yard. I am sure you girls could take baby out for a little walk at dinner-times on fine days, carrying it carefully and letting it breathe the fresh air, and not bundled and covered up in a heavy shawl as most mothers carry their small babies here.

(*d*) Recapitulation

This is your last lesson, and I now wish to briefly repeat to you some of the most important things I have told you. Before you start the baby's bath, always have everything ready ; it is harmful to the baby to keep it naked longer than it is absolutely necessary, and this is what is bound to happen if you have to get up after undressing it to get the articles that have been forgotten. The clothes should be placed in the following order on the fire-guard :— gown, long flannel, napkin, shirt, and binder on top, and the clean towels on the side. Always test the temperature of the water with your elbow before using it, and don't forget to cleanse the eyes, mouth, and nostrils. You need not be afraid to put the baby right in the bath, of course holding its head above water, and always remember to dry the baby absolutely dry, paying special attention to the folds of the skin, such as the groin and neck and behind the ears. Baby should never be overclothed with heavy unsuitable clothing ; the material should be of soft light flannel, fitting high up in the neck, but never have baby's clothing tight. You should always be able to easily insert two fingers between any part of the clothes and body. Remember that one of the best ways by which you can tell that a baby is thriving is by regularly weighing it. The best food for baby is its own natural food—mother's milk—and the quality of mother's milk is dependent upon the way in which the mother looks after her own health ; she should take good plain ordinary food, never take beer, stout, or

too much tea. If baby is not thriving on the breast, the mother should not jump to the conclusion that her milk does not agree with the baby, the reason probably is that she has not enough milk or baby takes too much milk from the breast at one feed. Before deciding to wean the baby under these conditions, it should be brought to the Babies' Welcome to see the doctor. A baby should not be weaned from the breast so long as the mother has any milk ; it may, however, have some cows' milk in addition to the breast. One of the most common reasons why a baby cries is that it is suffering the pain of indigestion, because it is not fed regularly. It is all-important that the baby should be got into the habit of regular feeding, and it should never be given the breast or its feed because it cries, but only at the proper intervals—during the first three months, every two hours, except in the night, and afterwards every three hours,—and between the feeds it should be asleep in its cot, except when it is bathed or taken up to be changed or taken out of doors. If the mother's milk fails, or for any other reason baby has to be artificially fed, the proper food to give is cows' milk, remembering always that it requires water added to it in the proper proportion, and then some sugar and cream to get constituents in the right proportions. You remember that one of the great dangers of cows' milk is the growth of germs as a result of dirt getting into it, and that germs grow more quickly in warm than in cold milk. The best way of avoiding germs is to pay attention to scrupulous cleanliness, buying milk from clean dairymen

and clean shops, receiving the milk in clean jugs, and protecting it from flies and dust and keeping it cool. The best germ-killer is boiling heat. This is the reason why jugs should be scalded in boiling water and the feeding-bottle washed with hot water and the milk brought up nearly to the boil. Never use the long-tubed bottle, because the long tube is difficult to clean, harbours germs, and enables the baby to take its food at all times and go to sleep with the teat in its mouth, in this way establishing the habit of mouth-breathing. The same disadvantages apply to the dummy, and it should not be used. The habit of mouth-breathing is the commencing cause of the disease known as "Adenoids." Always keep the baby clean. Cleanliness of body, cleanliness of clothing, cleanliness of bed-clothing, cleanliness of the milk and the feeding-bottle, cleanliness of the house, and clean or fresh air are all very essential for the maintenance of the baby's health. Cleanliness is really the most important of all the things I have taught you. The reward of a clean mother is a happy healthy baby, and of a dirty mother, a crying, sleepless, and whining baby.

A baby needs care, love, patience, and regularity in all things from the beginning of life to make it happy, strong, and healthy, and every mother, however poor and humble, can give these things to the precious little life given into her keeping, and upon the mother's knowledge depends the future health and happiness of her baby. Firm and gentle discipline forms that self-control which is so valuable throughout life.

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In November 1912 an examination was held at one of the schools on "MOTHERCRAFT," as taught at the Mothers' and Babies' Welcome. Some seventy of the elder girls sat. All the girls did really well, and those who wrote the best papers were called to attend for the oral at the Welcome. The answers were so good that the examiners had much difficulty in arriving at a decision as to who was best. Eventually it was decided to award seven prizes instead of three, as originally intended, twelve special certificates to the next best, and thirty certificates of merit to those who did fairly well.

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(1) Describe fully how you would prepare to wash and dress a baby.

(2) Should a baby be weighed ; if so, why, and how often ? What should be gained weekly during the first six months of life ?

(3) How should a baby be fed, and at what age should it be weaned ?

(4) If a baby is hand-fed, what would be the most suitable food up to one year of age ?

(5) Describe the best type of feeding-bottle, and give reason for stating it is the best.

(6) What sort of clothing do you consider
  (*a*) Suitable,
  (*b*) Unsuitable ?

(7) Explain the value of sleep and fresh air to a baby. Where and how should a baby sleep, day and night ?

THE END

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